

Excerpt from *Action Plan for Diabetes*, by Darryl E. Barnes, MD

<http://www.humankinetics.com/products/showproduct.cfm?isbn=0736054596>

Action Plan for Diabetes

Darryl E. Barnes, MD

Paperback • 168 Pages

ISBN 0-7360-5459-6

\$17.95 (\$26.95 Cdn)

Copyright 2004 by Human Kinetics Publishers, Inc. Excerpted by permission of Human Kinetics, Champaign, IL. Available in bookstores, by calling 1-800-747-4457, or visiting www.HumanKinetics.com.

Diabetes and Your Kidneys

From Chapter 2: Making Glucose Control Your Goal

According to the American Diabetes Association, 10 to 21 percent of people with diabetes have kidney disease, referred to as diabetic nephropathy. The kidneys are organs that filter out unnecessary products from your bloodstream and retain the necessary elements, such as proteins and electrolytes (sodium and potassium). However, high glucose levels can lead to an abnormality that allows necessary elements in your blood, such as proteins, to be wasted into the urine. This is referred to as proteinuria, which is a common sign of early kidney failure. Good glucose control through proper diet, exercise, and medication if needed can prevent diabetic nephropathy (Hostetter 2003).

Damage to your kidneys can also lead to the development of high blood pressure, also called hypertension. If you develop high blood pressure, it is important that you control your blood pressure. But if you develop high blood pressure and you have diabetes, it is even more important for you to control your blood pressure. The diseases that are directly related to high blood pressure, such as heart, eye, and kidney disease, may progress more rapidly in someone with diabetes and high blood pressure. Some classes of blood pressure-lowering medications may be more beneficial than others for diabetics with kidney problems. Your physician will need to take into account your medical condition to determine what medications are best for you.

Further damage to the kidneys can occur from untreated or undertreated urinary tract infections. Infections of the bladder are often controlled easily with the implementation of antibiotics. People with diabetes are more susceptible to these types of infections and at a greater risk of kidney damage if the infection spreads from the bladder to the kidneys causing them to become infected, too. This type of infection is commonly referred to as pyelonephritis.

It is also important that diabetics with kidney problems not receive contrast materials (a substance that is typically used when your doctor orders special X

rays) in their blood until receiving clearance from physicians. We know that these contrast agents can cause kidney damage in anyone, but we also know that those with diabetes are at an increased risk for this to occur. You should carry a medical alert card or something similar to identify you as a person with diabetes in case you require emergency treatment that involves contrast materials. A medical alert card, bracelet, or necklace will allow the medical team to take appropriate steps to protect you from potential harm.

Your doctor can monitor your kidney functioning by using lab tests, which include urine tests for glucose and protein. If your blood glucose is greater than 180 mg/dl, then glucose will appear in your urine; a urine test for elevated glucose levels can be helpful if blood glucose readings are unavailable. In fact, this is how many people with diabetes are initially diagnosed. As described previously, protein in the urine is usually indicative of kidney disease. Various methods of testing for protein in the urine include diagnostic test strips that are dipped into the urine and compared to standard colorimetric charts to determine estimated levels of substances including glucose and protein. This type of test is easy to use in the doctor's office, takes little time to complete, and is relatively inexpensive. Another test, called the 24-hour urine test, is more accurate and gives more specific levels of protein in the urine. Your doctor will typically order this test if your dip strip test is positive. If your 24-hour urine test shows that there are more than 30 milligrams of protein (albumin), your kidneys are having trouble retaining needed protein, which is evidence that damage has taken place in the kidneys. If this is the case, then your doctor may choose to place you on a common blood pressure medication known as an ACE inhibitor or angiotensin receptor II antagonist, even if you have normal blood pressure. Studies have shown that this particular drug not only controls blood pressure but also protects the kidneys in those with diabetes.